

# McLennan C O M M U N I T Y C O L L E G E

WACO, TEXAS

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## **COURSE SYLLABUS**

**AND**

## **INSTRUCTOR PLAN**

### **INTRODUCTION TO ENGINEERING**

**ENGR - 1201 – SECTION H50**

**DR. APRIL K. ANDREAS**

**NOTE: This is a 16-week course.**

**NOTE: This is a Blended/Hybrid course.**

#### **COVID 19 Notice:**

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

# INTRODUCTION TO ENGINEERING

## ENGR 1201 SECTION XX

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### **Course Description:**

An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Introduces the field of engineering as a career to help students answer the question, "Do I want to be an engineer?" and to help students be successful academically and professionally in the engineering field. Semester Hours 2 (2 lec)

### **Prerequisites and/or Corequisites:**

Prerequisite: Math 1314 with a minimum grade of C.

### **Instructor Information:**

Instructor Name:	Dr. April K. Andreas
MCC E-mail:	<a href="mailto:aandreas@mclennan.edu">aandreas@mclennan.edu</a>
Contact information:	254-299-8130, Science 221
Office Hours:	<a href="https://calendly.com/akandreas">https://calendly.com/akandreas</a>
Department Website:	<a href="http://www.mclennan.edu/engr/">http://www.mclennan.edu/engr/</a>

*This course meets 6 pm – 7:55 pm, in S 214*

Other Instruction Information: In the event that I am not able to be physically present in class, I will often provide videos for students to watch or assign reading or other activities so we do not get behind in the schedule. In such cases, students are expected to complete these activities just as they would be expected to complete activities and participate in the lecture where the material is being covered face-to-face. Other graded material (tests, quizzes, labs, etc.) will continue to be due as indicated in the syllabus unless I let the class know otherwise.

### **Required Text & Materials:**

*An Introduction to Engineering* by April Andreas & Bernard Smith

A scientific or graphing calculator that does exponents, logs, and trig functions.

**MCC Bookstore Website:** <http://www.mclennan.edu/bookstore/>

### **Course Notes, Instructor and Additional Requirements:**

MCC Engineering uses Slack for communication. All major course announcements will be posted in Slack – failure to check Slack will result in you missing important information. Also, anything we hear about jobs, scholarships, speakers, etc., will also be posted to Slack in the #general channel.

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Slack is free and used in the professional community as a workflow management system, so it is good to gain experience with the tool. All "general questions" like "I'm stuck on problem 5" will be directed to Slack, which will allow you and your classmates to support each other, especially in "time-crunch" situations. Always be respectful and professional in your participation. Please bear in mind that Slack is an open communication tool. Please do not ask for or reveal personal information through the tool. Note that anything you post in Slack in channels will be viewable by other channel participants. Do not post anything about personal grades, due dates, or personal issues. Do not post your own correct solutions to assignments, but you can post incorrect work and ask if anyone can see where you went wrong.

Slack can be used on both a desktop computer and as an app. For more information about Slack in general, visit <https://slack.com/>. You will be invited to our class channel via your MCC student account. Detailed guidelines for Slack are on Brightspace and on Slack itself.

### **Methods of Teaching and Learning:**

Students will learn through lectures and reading the textbook, as well as through independent research, and work on homework, quizzes, exams, lab exercises, a mock interview, and group projects which include a written paper and formal presentation. Additional methods may be used as opportunities present themselves.

### **Course Objectives and/or Competencies:**

An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Upon successful completion of this course, students will be able to:

1. Describe the engineering profession and engineering ethics, including professional practice and licensure.
2. Use technical communication skills to explain the analysis and results of introductory laboratory exercises in engineering and computer science.
3. Explain the engineering analysis and design process.
4. Analyze data collected during laboratory exercises designed to expose students to the different engineering disciplines.
5. Describe the impact engineering has had on the modern world.
6. As part of a team, design a simple engineering device, write a design report, and present the design.
7. Demonstrate computer literacy.

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### Course Outline or Schedule:

You are responsible for everything listed in the detailed calendar below. This calendar is subject to change. In the event that I need to make changes to the schedule, I will send an email to the class via Brightspace as soon as I possibly can.

Starting	Week #	In-Class Topics	Due Sunday by 11:59 pm
9-Jan	Week 1	Introduction to the Course What is Engineering?	Basic Skills A: Refresher Concept Inventory Test HW 1: Info About You survey HW 2: Exploring Engineering
16-Jan	Week 2	Succeeding as an engineering student Pick Your Path (PYP)	Basic Skills B: Number Basics Remediation HW 3: Pick Your Path (PYP) Basics
23-Jan	Week 3	Why Professional Skills Matter <i>Quiz 1: Names Quiz – Wed 1/25</i>	Basic Skills C: Algebra Basics Remediation HW 4: Create your LinkedIn Profile HW 5: Vocabulary Review
30-Jan	Week 4	Application Process Training (APT) Resumes and Interviewing <i>Quiz 2: Vocabulary Review – Wed 2/1</i>	Basic Skills D: Geometry Basics Remediation HW 6: APT Basics HW 7: Resumes Dos and Don'ts
6-Feb	Week 5	Rounding & Unit Conversions Word - Design Document Practice	HW 8: Rounding and Unit Conversions HW 9: Basics of Word
13-Feb	Week 6	Pythagorean Triples, Special Triangles, Degrees & Radians Word - Resume Formatting	HW 10: Pythagorean Triples, Special Triangles, Degrees & Radians HW 11: Word - Resume Formatting
20-Feb	Week 7	Trig Definitions & the Unit Circle Excel - GPA Calculator <i>Quiz 3: Names Quiz – Wed 2/22</i>	APT part A: First Draft of Resume HW 12: Trig Definitions & the Unit Circle HW 13: Excel - GPA Calculator
27-Feb	Week 8	Solving Problems with Trig Excel - Grade Estimator	APT part B: Schedule Mock Interview HW 14: Solving Problems with Trig HW 15: Excel - Grade Estimator
Spring Break March 6 – 10, No Class Meetings – Week 8 Assignments due Sunday, 3/12			
13-Mar	Week 9	Polar Coordinates Excel - Spring Constant (Plotting)	APT part C: Second Draft of Resume HW 16: Polar Coordinates HW 17: Excel - Spring Constant
20-Mar	Week 10	Graphing Vectors Excel - Normalizing Data <i>Quiz 4: Unit Circle – Wed 3/22</i>	APT part D: Practice Interview with Partner HW 18: Graphing Vectors HW 19: Excel - Normalizing Data
27-Mar	Week 11	Vector Math Excel - Case Study and Macros	HW 20: Vector Math HW 21: Excel - Case Study and Macros
3-Apr	Week 12	Intro to the Project <b>Academic Skills Test – Wed 4/5</b>	HW 22: Group Identity HW 23: Group Project Basics
10-Apr	Week 13	Ethics Group Project Work Day 1	Group Project Report Draft: Sections 2 through 5 HW 24: Ethics <b>*Pick Your Path Grade Goes Into Effect</b>

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Starting	Week #	In-Class Topics	Due Sunday by 11:59 pm
17-Apr	Week 14	Prof Engr Licensure Group Project Work Day 2 <i>Quiz 5: Names Quiz – Wed 4/19</i>	HW 25: Professional Engineering APT part E: Mock Interview due by 4/22
24-Apr	Week 15	Presentation Skills & PowerPoint Bingo Group Project Work Day 3	PYP: All items must be submitted by 4/28 Group Project Final Report (all sections)
1-May	Finals Week	<b>Project &amp; Prototype Presentation</b>	

### Course Grading Information:

Grade distribution	
Basic Refresher / Remediation	5%
Quizzes	5%
Homework	20%
Pick Your Path	20%
Group Design Project	20%
Academic Skills Test	15%
Application Process Training	15%
<b>Total</b>	<b>100%</b>

**A: 90%+    B: 80% – 89%    C: 70% – 79%    D: 60% – 69%    F: 0% – 59%**

**Basics Refresher:** An assessment of basic geometry and algebra skills will be given the first week. There are three primary categories.

- Solid geometry and triangles
- Averages, significant figures, scientific notation, unit prefixes
- Factoring and solving linear, quadratic, and rational equations

If you earn an 85% or higher in a category, you will automatically get 100% on the remediation portion for that category. Otherwise, you will need to do remediation, which requires meeting with the Supplemental Instructor to go over the material. You must complete the remediation activities before 11:59 pm on the dates posted in the syllabus. See Brightspace for more details.

**Quizzes.** There will be five quizzes spread throughout the semester. The quizzes may occur at any point during the class period. Students that are not present at the start of the quiz will receive a zero. See course calendar for quiz dates.

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**Homework.** All homework assignments are available on Brightspace. All homework assignments are due the Sunday at 11:59 pm (at the end of each Week). You will typically have more than one assignment due each Sunday. Check the schedule to see what is due.

**Pick Your Path (PYP).** This assignment aims to help you get experience in a variety of ways that should be useful to you as you work toward becoming an engineer. You have a great deal of flexibility in what you choose to do – make this an assignment that matters. All relevant information can be found on Brightspace.

**Group Design Project.** You will need to complete a design project with a team. There will be a series of work days to work on your project with your group in class. You are expected to be present for the entire class period on these days. More details will be provided in class.

**Application Process Training (APT).** The purpose of this portion of the course will be to prepare you for engineering job applications. It includes the creation of an engineering resume and a mock interview with the professor. All relevant details will be discussed in class and be found on Brightspace.

**Academic Skills Test.** There will be one test over all the academic skills topics covered in Weeks 5 through 11. The test will be closed-notes, closed-book, and portions of the test may need to be completed without a calculator. Internet capable devices (phones, tablets, etc) will not be allowed.

#### **Ways to get academic support for this class:**

**Supplemental Instruction.** This course has been assigned a Supplemental Instructor, who will be holding SI meetings a few times each week. The purpose of these meetings is to complement the course and provide help with course topics and assignments. SI Meetings can be attended in person or via Zoom. More information will be provided in class.

**Homework Nights.** The Engineering & Physics Club will be holding bi-weekly Homework Nights on campus throughout the semester. This is a great opportunity to meet with other students and meet with an engineering tutor (or SI) to get help with class assignments.

**Math Lab.** Any student enrolled in this class has free access to the Math Lab, located in the Learning Commons (LTC Building). You can find their contact information and hours of operations here: <https://www.mclennan.edu/math-lab/>

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**Smarthinking.** This is your 24/7 online tutor, provided free by MCC. You can access to Smarthinking through Brightspace. They will help you with math, science, and writing, among other subjects. (Writing analysis will take 24 hours, so be sure to contact them with plenty of time!)

**Academic Dishonesty.** Any student that is found guilty of academic dishonesty, such as cheating, plagiarism, or collusion, will receive a zero grade on every test or assignment involved. For repeated violations, a guilty student can be assigned a failing grade in this course and can be recommended for suspension from the McLennan Community College District.

#### **Late Work, Attendance, and Make Up Work Policies:**

Late assignments will not be accepted. If you have to miss class on the day that a homework assignment is due, you must turn in the assignment early. If you miss something we do in class for a grade (test, homework, quiz, etc.), you will get a zero for that activity.

If you are legitimately ill during an in-class assessment, you must email me the morning of the exam (before you miss it), and provide a doctor's note **the first day** you are back in class in order to receive consideration for a makeup exam.

Attendance is mandatory. ***Per MCC policy, you may be automatically dropped after missing 25% of class meetings, or 4 lectures.*** For this purpose, if you are not in class when roll is called, you are considered absent. You should still come to class even if you are going to be late, though, so as not to miss important information. If you are dropped before the official drop date, you will receive a grade of W.

If you wish to drop this class, you must email me from your MCC student account before 5 pm on the last day for student-initiated drops, with the request "Please drop me from COURSE ID and SECTION NUMBER." An email that says something like, "I would like to drop..." or, "I was thinking about dropping..." or, "I was wondering if I should drop..." will **not** be considered a drop request. (*Just like saying, "I would like to get married," does not mean anyone is going to automatically marry you.*) If the email does not come from your student account, or if the request is verbal, I cannot drop you. Alternatively, there is a form you can fill out and have me sign before 5 pm on the last day for student-initiated drops. (make an appointment to ensure I am on campus to provide the signature). After submitting your request, you must verify the drop was processed, notifying me in writing within 48 hours of your original request if it was not. Otherwise, you will stay on the roster for the rest of the semester and be awarded the grade

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earned. Drops past the drop date are only done in documented, extreme, life-crisis circumstances, which usually involve withdrawing from school entirely.

MCC allows for "excused" absences caused by (1) authorized participation in official College functions, (2) personal illness, (3) an illness or a death in the immediate family, or (4) the observance of a religious holy day. It is your responsibility to let me know the reason for an absence the day you return to campus and provide sufficient documentation (doctor's note, email from coach, etc.).

Normally, please do not bring your children, friends, or guests to the class. (Please discuss this with me because I do not want you missing class if you cannot make childcare arrangements.)

#### **Student Behavioral Expectations or Conduct Policy:**

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of this educational opportunity.

#### **[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)**

**(<https://www.mclennan.edu/highlander-guide/policies.html>)**

Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.



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Updated 11/04/2022

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## **ACADEMIC RESOURCES/POLICIES**

### **Accommodations/ADA Statement:**

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit [www.mclennan.edu/disability](http://www.mclennan.edu/disability).

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

[disabilities@mclennan.edu](mailto:disabilities@mclennan.edu) 254-299-  
8122  
Room 319, Student Services Center

### **Title IX:**

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the acting Title IX Coordinator at [titleix@mclennan.edu](mailto:titleix@mclennan.edu) or by calling, Dr. Claudette Jackson, (Diversity, Equity & Inclusion/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at [www.mclennan.edu/titleix/](http://www.mclennan.edu/titleix/). It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the

crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

**Student Support/Resources:**

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom from 7:30 am - 6:00 pm Monday through Thursday and 7:30 am - 5:00 pm on Friday. You can contact the Academic Support and Tutoring team via Zoom (<https://mclennan.zoom.us/j/2542998500>) or email ([ast@mclennan.edu](mailto:ast@mclennan.edu)) during the above mentioned times.

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing [crew@mclennan.edu](mailto:crew@mclennan.edu) or a Success Coach by calling (254) 299-8226 or emailing [SuccessCoach@mclennan.edu](mailto:SuccessCoach@mclennan.edu). Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to [https://mclennan.co1.qualtrics.com/jfe/form/SV\\_07byXd7eB8iTqJg](https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg). Both the Completion Center and Paulanne's Pantry are located on the second floor of the Student Services Center (SSC).

**MCC Foundation Emergency Grant Fund:**

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at [https://www.mclennan.edu/foundation/docs/Emergency\\_Grant\\_Application.pdf](https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf).

**MCC Academic Integrity Statement:**

Go to [www.mclennan.edu/academic-integrity](http://www.mclennan.edu/academic-integrity) for information about academic integrity, dishonesty, and cheating.

**Minimum System Requirements to Utilize MCC's D2L|Brightspace:**

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-andStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

**Minimum Technical Skills:**

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

**Backup Plan for Technology:**

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

**Email Policy:**

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to [www.mclennan.edu/studentemail](http://www.mclennan.edu/studentemail).

**Instructional Uses of Email:**

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

**Email on Mobile Devices:**

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email [Helpdesk@mclennan.edu](mailto:Helpdesk@mclennan.edu) for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

**Forwarding Emails:**

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email [helpdesk@mclennan.edu](mailto:helpdesk@mclennan.edu).

**Disclaimer:**

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.